

NOVEMBER/DECEMBER 2023

**FEL31/CEL41/BEL41 — SEMICONDUCTOR
DEVICES AND IC FABRICATION
TECHNOLOGY**

Time : Three hours

Maximum : 75 marks



SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is biasing?
2. Write the relation between α and β .
3. Mention the difference between FET and MOSFET.
4. Write any two advantages of MOSFET.
5. Draw the symbol of SCR?
6. What is Triac?
7. What is photodiode?
8. What is solar cell?
9. What is VLSI?
10. Write the difference between the thin and thick films?

SECTION B — ($5 \times 5 = 25$ marks)

Answer ALL questions.

11. (a) Discuss the working of PNP transistor.

Or

- (b) Explain the working of transistor as an oscillator.

12. (a) Describe the construction and working characteristics of FET.

Or

- (b) List out the applications of FET and MOSFET.

13. (a) Describe the construction and working characteristics of UJT

Or

- (b) Outline the triac characteristics.

14. (a) Elucidate the working of CCD.

Or

- (b) Write a short note on Semiconductor LASER diode.

15. (a) Explain the fabrication of a resistor.

Or

- (b) List out the merits and demerits of ICs.

SECTION C — ($3 \times 10 = 30$ marks)

Answer any THREE questions.

16. Explain the transistor characteristics in CE mode.

17. Describe the construction and working characteristics of MOSFET.

18. Explain the working of SCR.

19. Discuss the working and merits of LCD.

20. Discuss the step involved in the fabrication of capacitor and diode.

